

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A power supply apparatus comprising:

a radio frequency signal oscillator for oscillating a radio frequency signal;

a modulator for carrying out pulse modulation of the radio frequency signal oscillated by said radio frequency signal oscillator, and for outputting a pulse signal;

a unit for instructing a selection of either the radio frequency signal or the pulse signal;

an amplifier for amplifying ~~a selected one of either~~ the radio frequency signal oscillated by said radio frequency signal oscillator ~~and/or~~ the pulse signal output from said modulator according to the selection; and

a transmitting device for transmitting the ~~selected one of the radio frequency signal and the or~~ pulse signal which is amplified by said amplifier to an external device, wherein

 said radio frequency signal is selected for amplification by the amplifier when the transmitted signal is to provide a power supply to the external device, and said pulse signal is selected for amplification by the amplifier when the transmitted signal is to provide data to the external device, and

 said amplifier amplifies the selected one of the radio frequency signal and the pulse signal operates in a manner that a peak power of the radio frequency signal output by the amplifier becomes greater when the radio frequency signal is amplified than peak power of when the pulse signal is amplified.

2. (Previously Presented) The power supply apparatus according to claim 1, wherein the radio frequency signal oscillated from said radio frequency signal oscillator is an unmodulated continuous wave.

3. (Currently Amended) A power supply apparatus comprising:

a radio frequency signal oscillator for oscillating a radio frequency signal;

a unit for instructing a selection of either a power supply or transmission data to be provided to an external device;

a modulator for carrying out pulse modulation of the radio frequency signal oscillated by said radio frequency signal oscillator in order to output, and for outputting a pulse signal with a duty ratio determined based on the selection;

an amplifier for amplifying the pulse signal output from said modulator; and
a transmitting device for transmitting the pulse signal amplified by said amplifier to an the external device, wherein

when said transmitting device transmits a pulse signal for providing a the selection is made to provide the power supply to the external device, said modulator increases athe duty ratio of the pulse signal, and said amplifier increases an amplification factor of the pulse signal to increase the peak power of the pulse signal, as compared with a case of transmitting a pulse signal for providing when the selection is made to provide the transmission data to the external device.

4. (Previously Presented) The power supply apparatus according to claim 3, wherein said modulator carries out pulse modulation of the radio frequency signal, and outputs the pulse signal for the power supply and the pulse signal corresponding to the transmission data alternately in time.

5. (Previously Presented) The power supply apparatus according to claim 4, wherein said modulator outputs the pulse signal for the power supply at predetermined time intervals after the pulse signal for the power supply is transmitted.

6. (Previously Presented) The power supply apparatus according to claim 3, wherein said modulator modulates, instead of carrying out the pulse modulation of the radio frequency signal, the radio frequency signal using a digital modulation method of generating a modulation signal whose envelope varies.

7. (Currently Amended) A power supply apparatus comprising:

 a radio frequency signal oscillator for oscillating a radio frequency signal;
 a unit for instructing a selection of either a power supply or transmission data to be provided to an external device;
 a modulator for carrying out pulse modulation of the radio frequency signal oscillated by said radio frequency signal oscillator in order to output, and for outputting a pulse signal with a duty ratio determined based on the selection;
 a first amplifier for amplifying the pulse signal output from said modulator;
 a second amplifier for amplifying the pulse signal amplified by said first amplifier; and
 a transmitting device for selectively-transmitting one of either the pulse signal amplified by said first amplifier and/or the pulse signal amplified by said second amplifier to an-the external device according to the selection, wherein
 said modulator makes a duty ratio of the pulse signal greater when said transmitting device transmits the pulse signal amplified by said second amplifier to the external device than when said transmission device transmits the pulse signal amplified by said first amplifier to the external device.

8. (Previously Presented) The power supply apparatus according to claim 7, wherein said modulator carries out pulse modulation of the radio frequency signal, and outputs a pulse signal for power supply and a pulse signal corresponding to transmission data alternately in time.

9. (Previously Presented) The power supply apparatus according to claim 8, wherein said modulator outputs the pulse signal for the power supply at every predetermined time interval after the pulse signal for the power supply is transmitted.

10. (Previously Presented) The power supply apparatus according to claim 7, wherein said modulator modulates, instead of carrying out the pulse modulation of the radio frequency signal,

the radio frequency signal using a digital modulation method of generating a modulation signal whose envelope varies.

11. (Currently Amended) A power supply apparatus comprising:

a radio frequency signal oscillator for oscillating a radio frequency signal;

a unit for instructing a selection of either a power supply or transmission data to be provided to external noncontact wireless communication equipment;

a modulator for carrying out pulse modulation of the radio frequency signal oscillated by said radio frequency signal oscillator in order to output, and for outputting a pulse signal with a duty ratio determined based on the selection;

a first amplifier for amplifying the pulse signal output from said modulator;

a second amplifier for amplifying the pulse signal amplified by said first amplifier;

a transmitting and receiving device for: selectively

transmitting one of the pulse signal amplified by said first amplifier and/or the pulse signal amplified by said second amplifier to the external noncontact wireless communication equipment according to the selection, and for

receiving a pulse signal transmitted from said external noncontact wireless communication equipment; and

a demodulator for demodulating the pulse signal received by said transmitting and receiving device, wherein

 said modulator makes, when said transmitting and receiving device transmits the pulse signal amplified by said second amplifier, a duty ratio of the pulse signal greater than when said transmitting and receiving device transmits the pulse signal amplified by said first amplifier.

12. (Previously Presented) The power supply apparatus according to claim 11, wherein

 said transmitting and receiving device comprises:

 an antenna for transmitting and receiving the pulse signal; and

a circulator for supplying said antenna with the pulse signal amplified by said first or second amplifier, and for supplying said demodulator with the pulse signal received by said antenna, and wherein

said power supply apparatus comprises:

a switch that is brought to an OFF state when said circulator supplies said antenna with the pulse signal amplified by said first or second amplifier, and that is brought to an ON state when said circulator supplies said demodulator with the pulse signal received by said antenna, said switch being interposed between said circulator and said demodulator.

13. (Currently Amended) A power supply method comprising the steps of:

carrying out pulse modulation of a radio frequency signal to produce a pulse signal;
selecting ~~one of either~~ said radio frequency signal ~~and or~~ the pulse signal, such that:

the radio frequency signal is selected when a power supply is to be provided by transmission to an external device, and

the pulse signal is selected when a data signal is to be provided by transmission to the external device;

amplifying the selected ~~one of the pulse signal and the radio frequency~~ signal to produce an amplified signal; and

transmitting the amplified signal to the external device, wherein

the amplifying step is performed in a manner that peak power of the amplified signal is greater when the radio frequency signal is the selected signal than when the pulse signal is the selected signal.

14. (Original) The power supply method according to claim 13, wherein the radio frequency signal is an unmodulated continuous wave.

15. (Currently Amended) A power supply method comprising the steps of:

selecting to provide either a power supply or transmission data to an external device;

carrying out pulse modulation of a radio frequency signal in order to produce a pulse signal with a duty ratio determined based on the selection;

amplifying the pulse signal produced as a result of the pulse modulation; and
transmitting the amplified pulse signal to an external device, wherein

~~the power supply method makes, when transmitting the pulse signal when the selection is made to provide a the power supply to the external device, a the pulse modulation is carried out so as to make the~~ duty ratio of the pulse signal greater and an amplification factor of the pulse signal higher to increase the peak power of the pulse signal, as compared with the case when than when transmitting the pulse signal the selection is made to provide transmission data to the external device.

16. (Previously Presented) The power supply method according to claim 15 wherein the pulse modulation of the radio frequency signal is carried out so as to output the pulse signal for providing the power supply and the pulse signal for providing the transmission data alternately in time.

17. (Previously Presented) The power supply method according to claim 16 wherein the pulse modulation is carried out so as to output the pulse signal for providing the power supply at predetermined time intervals after the pulse signal for providing the power supply is transmitted.

18. (Previously Presented) The power supply method according to claim 15 further comprising modulating, instead of carrying out the pulse modulation of the radio frequency signal, the radio frequency signal by using a digital modulation method that generates a modulation signal whose envelope varies.

19. (Currently Amended) A power supply method comprising:

selecting to provide either a power supply or transmission data to an external device;
carrying out pulse modulation of a radio frequency signal in order to produce a pulse signal with a duty ratio determined based on the selection;

utilizing a first amplifier to amplify the pulse signal produced by the pulse modulation;
utilizing a second amplifier to amplify the pulse signal amplified by the first amplifier;
and

selectively transmitting one of the pulse signal amplified by the first amplifier and the pulse signal amplified by the second amplifier to an external apparatus, wherein

the pulse modulation is carried out so as to make the a-duty ratio of the pulse signal is made-greater when the pulse signal amplified by the second amplifier is to be transmitted to the external apparatus than when the pulse signal amplified by the first amplifier is to be transmitted to the external apparatus according to the selection.

20. (Previously Presented) The power supply method according to claim 19 wherein the pulse modulation of the radio frequency signal is carried out so as to output the pulse signal for providing the power supply and the pulse signal for providing the transmission data alternately in time.

21. (Previously Presented) The power supply method according to claim 20 wherein the pulse modulation is carried out so as to output the pulse signal for providing the power supply at predetermined time intervals after the pulse signal for providing the power supply is transmitted.

22. (Previously Presented) The power supply method according to claim 19 further comprising modulating, instead of carrying out the pulse modulation of the radio frequency signal, the radio frequency signal by using a digital modulation method that generates a modulation signal whose envelope varies.

23. (Currently Amended) A power supply method comprising:

selecting to provide either a power supply or transmission data to external noncontact wireless communication equipment;

carrying out pulse modulation of a radio frequency signal in order to produce a pulse signal with a duty ratio determined based on the selection;

utilizing a first amplifier to amplify the pulse signal produced by the pulse modulation;
utilizing a second amplifier to amplify the pulse signal amplified by the first amplifier;
~~selectively transmitting one of the pulse signal amplified by the first amplifier and/or the~~
pulse signal amplified by the second amplifier to the external noncontact wireless
communication equipment according to the selection;

demodulating, when receiving a pulse signal transmitted from said external noncontact wireless communication equipment, the received pulse signal, wherein

when the pulse signal amplified by the second amplifying step is to be transmitted to the external noncontact wireless communication equipment according to the selection, ~~a-the pulse modulation is carried out so as to make the~~ duty ratio of the transmitted pulse signal ~~is made~~ greater than when the pulse signal amplified by the first amplifier is to be transmitted to the external noncontact wireless communication equipment according to the selection.

24. (New) A power supply apparatus comprising:

an oscillator oscillating a radio frequency signal;

a unit outputting either data to be transmitted to an external device or a control signal to supply said external device with power before transmitting said data;

a modulator generating a modulation signal corresponding to data output by the unit by using the radio frequency signal from the oscillator;

an amplifier amplifying the modulation signal from the modulator when detecting the data output by the unit, and amplifying the radio frequency signal from the oscillator to make said radio frequency signal greater in peak power than the modulation signal to be amplified when detecting the control signal output by the unit; and

a transmitting device transmitting the amplified signal from the amplifier to the external device.

25. (New) The power supply apparatus according to claim 24, wherein the modulator generates the modulation signal through digital modulation on the radio frequency signal in accordance with the data.

26. (New) The power supply apparatus according to claim 24, wherein

the modulator converts the radio frequency signal to a pulse signal when detecting the control signal output by the unit, and generates the modulation signal through pulse modulation on a pulse signal of the radio frequency signal in accordance with the data when detecting the data output by the unit; and

the amplifier amplifies the pulse signal converted by the modulator when detecting the control signal.

27. (New) The power supply apparatus according to claim 26, wherein when converting the radio frequency signal to a pulse signal, the modulator operates at, a greater duty ratio than that of the pulse modulation while the duty ratio indicates an inverse number of a ratio of pulse width to repetition period of pulse signal.

28. (New) A power supply method comprising steps of:

oscillating a radio frequency signal;

outputting either data to be transmitted to an external device or a control signal to supply said external device with power before transmitting said data;

generating a modulation signal corresponding to the output data by using the radio frequency signal;

amplifying the modulation signal when detecting the output data, and amplifying the radio frequency signal to make said radio frequency signal greater in peak power than the modulation signal to be amplified when detecting the output control signal; and

transmitting the amplified signal to the external device.

29. (New) The power supply method according to claim 28, wherein

the modulation signal is generated through digital modulation on the radio frequency signal in accordance with the output data.

30. (New) The power supply method according to claim 28, further comprising a step of converting the radio frequency signal to a pulse signal when detecting the output control signal, wherein

the modulation signal is generated through pulse modulation on a pulse signal of the radio frequency signal in accordance with the data when detecting the output data; and

when detecting the control signal from the unit, the converted pulse signal is amplified.

31. (New) The power supply method according to claim 30, wherein when converting the radio frequency signal to a pulse signal, said converting is operated at a greater duty ratio than that of the pulse modulation while the duty ratio indicates an inverse number of a ratio of pulse width to repetition period of pulse signal.